

To: Middleton, Karlyn[Middleton.Karlyn@epa.gov]
From: Nguyen, Khue
Sent: Mon 9/21/2015 1:40:27 PM
Subject: RE: Glyphosate Cancer Questions

Thanks!

Khue Nguyen

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From: Middleton, Karlyn
Sent: Friday, September 18, 2015 10:58 AM
To: Nguyen, Khue
Cc: Anderson, Neil; Rowland, Jess; Perron, Monique
Subject: Glyphosate Cancer Questions

Hi Khue,

Below are the answers to the questions related to cancer and glyphosate exposure from Jess and I. Monique will send you the answers to the rest of the glyphosate questions.

●■■■■■■■■ The International Agency on the Research for Cancer (IARC) released their final conclusions that glyphosate is likely to cause cancer. What is EPA's

position on this and how is this information being considered?

EPA has re-evaluated the available carcinogenicity data for glyphosate, which included carcinogenicity and epidemiology data reviewed by IARC, as well as additional cancer studies in rats and mice, not previously submitted to the agency (but reviewed by IARC). Based on a thorough weight-of-evidence evaluation of epidemiology studies published in the open literature (reviewed by IARC), several carcinogenicity studies in mice and rats, hazard profile and exposure, EPA, in accordance with the Agency's 2005 Guideline for Carcinogen Risk Assessment concluded that glyphosate is "Not Likely to be Carcinogenic to Humans".

• Why does EPA disagree with the IARC assessment? How can EPA and IARC come to different conclusions about glyphosate's ability to cause cancer?

The USEPA's cancer classification for glyphosate is based on weight-of-evidence considerations in accordance with the Agency's 2005 Guideline for Carcinogen Risk Assessment. Conclusions for glyphosate are based on the combined strength and coherence of inferences appropriately drawn from all of the available information for the chemical. Guidelines criteria for determination of significance to the tumor findings include: tumors in multiple species, strains or both sexes; dose-response; progression of lesions from preneoplastic to benign to malignant; proportion of malignant tumors; reduced latency of neoplastic lesions; and the biological and statistical significance of the findings. Additionally, the USEPA considered all of the available cancer studies for glyphosate; therefore, those studies without tumor findings were also considered in the weight of the evidence. In contrast, the IARC, in accordance with their preamble, identifies a cancer "hazard" as an agent that is capable of causing cancer under some circumstances even when risks are very low at current exposure levels. Also, the IARC glyphosate evaluation only included a subset of cancer studies, not including a number of cancer studies in mice and rats with negative findings (i.e., no tumors observed) reported in a review article.

• Is it true that glyphosate is linked to Parkinson's disease and Non-Hodgkin's Lymphoma?

The available scientific data does not support a cause and effect relationship between exposure to glyphosate and Parkinson's or Non-Hodgkin's Lymphoma. This conclusion

was also drawn by Health Canada's Pesticide Management Regulatory Agency. If, at any time, reliable data are available that suggest unexpected risks due to glyphosate exposure, the Agency will ensure the data are evaluated and move quickly to take the appropriate regulatory actions.